

In the Claims

1-42. (Canceled)

43. (Currently amended) A method of screening candidate modulator compounds of a Protein Phosphatase 2A (PP2A) phosphatase comprising the steps of:

- a) contacting PP2A/B γ or a PP2A phosphatase comprising a PP2A/B γ subunit with the candidate modulator compound; and
- b) testing the activity of PP2A/B γ or of the PP2A phosphatase comprising a PP2A/B γ subunit in the presence of said candidate compound, said testing comprising:
 - i) contacting said PP2A phosphatase with a substrate and measuring the activity of said PP2A phosphatase in the presence and absence of said candidate compound; or
 - ii) contacting PP2A/B γ with KCNQ2 (KCNQ2 potassium channel) polypeptides comprising SEQ ID NOs:2, 4 or 6, PP2A catalytic subunits or PP2A scaffolding subunits in the presence and absence of said candidate compound and measuring the binding of KCNQ2 polypeptides, PP2A catalytic subunits or PP2A scaffolding subunits to PP2A/B γ ,

wherein said activity comprises PP2A phosphotyrosine phosphatase activity, PP2A serine/threonine protein phosphatase activity, the binding of PP2A/B γ to KCNQ2 polypeptides or of the binding of PP2A/B γ to the catalytic subunit of PP2A or to the scaffolding subunit of PP2A polypeptides and a difference in the activity of PP2A/B γ or of the PP2A phosphatase comprising a PP2A/B γ subunit in the presence of said compound in comparison to the activity in the absence of said compound indicates that the compound is a modulator of PP2A/B γ or of the PP2A phosphatase comprising a PP2A/B γ subunit.

44. (Canceled)

45. (Currently amended) The method according to claim 43, wherein said candidate modulator compound is selected from the group consisting of a natural ligand that binds to a phosphatase comprising PP2A/B γ , a small molecule, an antibody, an antisense RNA for mRNA encoding PP2A/B γ , an aptamer and a short interfering RNA.

46-62. (Canceled)

63. (Currently amended) The method according to ~~any of claims~~ claim 43, wherein said activity is assessed by measuring its phosphotyrosine phosphatase activity of said PP2A phosphatase comprising a ~~PP2A/ $\beta\gamma$~~ PP2A/B γ subunit.

64. (Canceled)

65. (Currently amended) The method according to ~~any of claims~~ claim 45, wherein said activity is assessed by measuring its phosphotyrosine phosphatase activity of said PP2A phosphatase comprising a ~~PP2A/ $\beta\gamma$~~ PP2A/B γ subunit.

66. (Currently amended) The method according to ~~any of claims~~ claim 43, wherein said activity is assessed by measuring its serine/threonine protein phosphatase activity of said PP2A phosphatase comprising a ~~PP2A/ $\beta\gamma$~~ PP2A/B γ subunit.

67. (Canceled)

68. (Currently amended) The method according to ~~any of claims~~ claim 45, wherein said activity is assessed by measuring its serine/threonine protein phosphatase activity of said PP2A phosphatase comprising a ~~PP2A/ $\beta\gamma$~~ PP2A/B γ subunit.

69. (Currently amended) The method according to ~~any of claims~~ claim 43, wherein said activity is assessed by measuring the binding of ~~PP2A/ $\beta\gamma$~~ PP2A/B γ to KCNQ2 polypeptides.

70. (Canceled)

71. (Currently amended) The method according to ~~any of claims~~ claim 45, wherein said activity is assessed by measuring the binding of ~~PP2A/ β γ~~ PP2A/B γ to KCNQ2 polypeptides.

72. (Currently amended) The method according to ~~any of claims~~ claim 43, wherein said activity is assessed by measuring the binding of ~~PP2A/ β γ~~ PP2A/B γ to the catalytic subunit of PP2A or to the scaffolding subunit of PP2A.

73. (Canceled)

74. (Currently amended) The method according to ~~any of claims~~ claim 45, wherein said activity is assessed by measuring the binding of ~~PP2A/ β γ~~ PP2A/B γ to the catalytic subunit of PP2A or to the scaffolding subunit of PP2A.

75. (Currently amended) The method according to claim 69, wherein said binding of ~~PP2A/ β γ~~ PP2A/B γ to KCNQ2 polypeptides is measured by performing a yeast mating test or a solid phase overlay assay.

76. (Currently amended) The method according to claim 70, wherein said binding of ~~PP2A/ β γ~~ PP2A/B γ to KCNQ2 polypeptides is measured by performing a yeast mating test or a solid phase overlay assay.

77. (Currently amended) The method according to claim 71, wherein said binding of ~~PP2A/ β γ~~ PP2A/B γ to KCNQ2 polypeptides is measured by performing a yeast mating test or a solid phase overlay assay.

78. (Currently amended) The method according to claim 72, wherein said binding of ~~PP2A/ $\beta\gamma$~~ PP2A/B γ to KCNQ2 polypeptides is measured by performing a yeast mating test or a solid phase overlay assay.

79. (Currently amended) The method according to claim 73, wherein said binding of ~~PP2A/ $\beta\gamma$~~ PP2A/B γ to KCNQ2 polypeptides is measured by performing a yeast mating test or a solid phase overlay assay.

80. (Currently amended) The method according to claim 74, wherein said binding of ~~PP2A/ $\beta\gamma$~~ PP2A/B γ to KCNQ2 polypeptides is measured by performing a yeast mating test or a solid phase overlay assay.

81. (Previously presented) The method according to claim 45, wherein said modulator is a candidate drug for the treatment of a mental disorder.

82. (Previously presented) The method according to claim 81, wherein said mental disorder is selected from the group consisting of bipolar disorder, schizophrenia and depression.